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RESEARCH IN FOREIGN LANGUAGE TEACHING METHODOLOGY.

BY- ORNSTEIN, JACOB LADO, ROBERT

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A SELECTIVE REVIEW OF CURRENT RESEARCH PROJECTS AND PUBLICATIONS, MAINLY FROM THE UNITED STATES, ON THE METHODOLOGY OF TEACHING FOREIGN LANGUAGES REVEALS MANY IMPORTANT SOURCES FOR FURTHER RESEARCH AND DOCUMENTATION ON MANY PROBLEMS. THE NEED TO SUMMARIZE, CLASSIFY, AND CLARIFY IS URGENT. AMONG CURRENT RESEARCH, TWO BASIC TYPES ARE DISTINGUISHABLE--THOSE CONCERNED WITH BROAD-SCALE COMPARISONS OF TWO METHODS OR SYSTEMS OF TEACHING, AND THOSE WHICH CONCENTRATE ON A SPECIFIC LIMITED PROBLEM. THE SAME DICHOTOMY IS EVIDENT IN THE RESEARCH UNDERTAKEN TO DETERMINE THE SPECIAL ROLE OF THE LANGUAGE LABORATORY IN TEACHING. AN ANALYSIS OF RESULTS OF METHODOLOGICAL RESEARCH IN THE SOVIET UNION, FRANCE, AND GERMANY UNDERLINES THE ADVANTAGES TO BE GAINED FROM AN INTIMATE COLLABORATION AMONG RESEARCHERS ON BOTH SIDES OF THE ATLANTIC. MANY EXTREMELY PROMISING RESEARCH PROBLEMS ARE IN NEED OF A CONCERTED AND INTERDISCIPLINARY ATTACK, AIDED BY THE RICH TECHNOLOGICAL RESOURCES NOW AT OUR DISPOSAL. AMONG SEVERAL PROPOSED TARGETS OF INVESTIGATION ARE (1) A STUDY OF THE APPROPRIATE AMOUNTS AND ORDER OF EXPOSURE TO THE FOUR ACTIVITIES OF LISTENING, SPEAKING, READING, AND WRITING, (2) RESEARCH ON THE EFFECTIVENESS OF VARIOUS TYPES OF VISUAL AIDS FOR SPECIFIC ELEMENTS OF LEARNING, AND (3) INVESTIGATION OF NEEDS IN LEXICOGRAPHY IN ORDER TO STIMULATE THE PRODUCTION OF IMPROVED GLOSSARIES AND DICTIONARIES FOR STUDENT USE. THIS ARTICLE APPEARED IN THE "INTERNATIONAL REVIEW OF APPLIED LINGUISTICS IN LANGUAGE TEACHING," VOLUME 5, NUMBER 1, MARCH 1967, PAGES 11-25. (JH)

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RESEARCH IN FOREIGN LANGUAGE TEACHING METHODOLOGY[1])

Jacob Ornstein and Robert Lado

L'article passe en revue, d'une manière sélective, les recherches actuelles, surtout aux Etats-Unis, sur la méthodologie de l'enseignement des langues étrangères. Il indique quelques sources importantes de soutien à la recherche et de documentation sur les recherches en cours. A titre d'exemple, quelques projects de recherche méthodologique sont esquissés. Les auteurs en distinguent deux types — les études qui comparent globalement deux façons ou deux systèmes d'enseigner, et celles qui se concentrent sur une question pédagogique nettement délimitée. On trouve la même paire de tendances dans les recherches effectuées pour déterminer le rôle propre du laboratoire des langues dans l'enseignement. Les résultats des études globales comparatives sont décevants, à cause du grand nombre d'impondérables qui entrent en jeu; la préférence des auteurs va nettement vers les recherches qui sont concentrées sur des questions précises et bien délimitées, car celles-là sont plus susceptibles d'apporter des solutions. Quelques expériences méthodologiques en URSS, en France et en Allemagne sont citées pour souligner l'intérêt réel qu'offre une collaboration plus intime entre chercheurs des deux cotés de l'Atlantique. Pour terminer, les auteurs esquissent plus d'une douzaine de thèmes de recherche prometteurs, qui attendent une attaque concertée et inter-disciplinaire, aidée par les riches ressources technologiques dont on dispose actuellement.

Der Artikel berichtet über einige ausgewählte Kapitel der gegenwärtigen Forschung (vor allem in den USA) im Bereich der Methodik des Fremdsprachenunterrichts. Er zeigt einige wichtige Hilfsquellen für die Forschung und für die Dokumentation über laufende Projekte. Als Beispiel werden einige Projekte der methodologischen Forschung skizziert. Die Verfasser unterscheiden dabei zwei Typen: Studien, die umfassend zwei Unterrichtsarten oder Systeme vergleichen und solche, die sich auf eine klar abgegrenzte pädagogische Frage konzentrieren. Diese beiden Richtungen zeigen sich auch in Studien, die durchgeführt wurden, um die spezielle Rolle des Sprachlabors im Unterricht zu bestimmen. Die Ergebnisse umfassender vergleichender Studien sind trügerisch auf Grund der großen Anzahl von Imponderabilien, die hier auftreten. Die Neigung der Autoren richtet sich ganz klar auf solche Forschungen, die auf präzise Fragestellungen konzentriert und begrenzt sind, weil sie eher dazu geeignet sind Ergebnisse zu bringen. Einige methodologische Erfahrungen aus der UdSSR, aus Frankreich und Deutschland werden zitiert, um den echten Gewinn zu unterstreichen, den eine engere Zusammenarbeit zwischen Forschern auf beiden Seiten des Atlantiks bringt. Abschließend skizzieren die Verfasser mehr als ein Dutzend vielversprechender Forschungsthemen, die, von den

[1]) Appreciation is expressed to John B. Caroll of Harvard University, Alfred F. Hayes, Center for Applied Linguistics, and Theodore W. Walters, S. J., University of Detroit, for making helpful suggestions regarding this paper. The writers, however, take full responsibility for its content.

heutzutage reichlich vorhandenen technologischen Hilfsmitteln unterstützt, eine interdisziplinarisch abgestimmte Inangriffnahme erfordern.

1. General Background
2. Sources of Information
3. Overall Approaches and Specific Problems in Language Learning
4. Electro-Mechanical Devices and Self-Instructional Aids
5. Activity in Some European Countries
6. Some Desiderata in Pedagogic Research

1. General Background

Research demands heavy outlays of resources, including time, facilities and money. Although remarkable cases exist of individuals single-handedly carrying out investigations on their own initiative, the scope of such undertakings is simply not sufficient for present needs. The principal source of financial support in the United States is now the National Defense Education Act, particularly Title VI, Title VII and the Cooperative Research program, administered by the Office of Education. Next in order are the foundations, especially the Ford, Rockefeller, and Carnegie ones, which since World War II have made substantial, though sporadic, contributions. Finally, the colleges themselves, and a few secondary schools and school systems, provide financial and other support from available resources. Quite often a project is supported by a combination of two or all three of the sources mentioned.

Although the effort being expended on investigations of teaching methodology appears great by comparison with the interwar period[1]), so many questions beg for scientific validation that the present commitment is far from excessive. For one thing, there is need for studies on the classroom applications of the leading contemporary linguistic theories: Bloomfieldian and neo-Bloomfieldian structuralism, Pike's tagmemics, Chomsky's transformational approach and their various offshoots. Furthermore, problems stemming from the "agonizing re-appraisal" of the American school in the wake of Sputnik I, and involving the relation of foreign language study to other subjects on the curriculum, call for more systematic investigation. Then again, the heavy commitment to the use of hardware, especially language laboratories, requires more precise jusification And last but not least, the increasing interest of some psychologists in verbal learning is proving a stimulus for expanded research on language learning.

In the present atmosphere of ferment and hope for new breakthroughs in language learning and related areas, it is not surprising that the research picture is a bewildering one. The need to summarize, classify, and clarify is urgent. The present article, without claiming exhaustiveness, represents an effort to fill that need.

2. Sources of Information

Since there is not yet any central system for retrieving and disseminating information on research in methodology, one must consult a variety of sources in order to keep abreast of developments.

The Office of Education, which administers the NDEA, issues periodic reports on research conducted under its auspices. Of special significance is its annual bulletin, *Completed Research Studies and Instructional Materials.* An examination of the 1963, 1964, and 1965 bulletins (OE-120/6-63, 64, 65) reveals a high proportion of projects devoted to the production of needed teaching and reference texts and dictionaries, mainly in the neglected tongues, although conventional languages are also represented. Another category consists of status surveys, including enrollment statistics and trends, certification requirements, and the like. The remainder consists of studies on various aspects of the language learning and teaching process, some of them involving the cooperation of linguists, language teachers, psychologists and other specialists.

Another source of information on current activity is the Education and Research Program, headed by Alfred F. Hayes of the Center for Applied Linguistics, 1755 Massachusetts Ave., N. W., Washington, D. C. This program follows developments in four inter-related areas of applied linguistics in education: language research, theory and methodology in language teaching, teaching of English as a native language, and adult thinking about language matters. The Center issues periodic reports titled *Language Research in Progress,* the most recent of which is Report No. 3, June 1966, covering projects current from December, 1965, on.

The Science Information Exchange, also in Washington D. C., at 1730 M Street, N. W., assembles data in a variety of fields which have implications for linguistics and language teaching.

Valuable information, particularly on methodology experimentation, is to be found in the publications of the Modern Language Association of America. Since 1952 its Foreign Language Program, with support from the Rockefeller, Ford and Carnegie Foundations as well as the Office of Education, has conducted surveys of the foreign language situation in America and studies on methodology. In addition it has evaluated materials in eleven foreign languages and created various types of tests. It maintains a Materials Center, with a permanent display of texts and other teaching materials. A list of the low-cost pamphlets and items produced by the Association is available from: Materials Center, Modern Language Association, 4 Washington Place, New York, N. Y., 10003.

Another useful reference on post World War II activity is John B. Carroll's "Research on Teaching Foreign Languages", Chapter 21 in N. L. Gage (ed.), *Handbook of Research in Teaching.*[2]) An experimental researcher himself, Carroll

[2]) Chicago: Rand McNally and Co., 1963, pp. 1060–1100.

surveys highlights of recent activity and provides his own evaluation, to which reference will be made later.

Of considerable help also is a longer book, *Research on Language Teaching: An Annotated International Bibliography for 1945–61*, edited by Howard L. Nostrand, David William Foster and Clay B. Christensen.[3])

3. General Approaches and Specific Problems in Language Learning.

An example of a fairly representative type of project comparing two methodological approaches was one directed by Victor E. Hanzeli and A. B. Creore at the University of Washington. In this study an experimental group of beginning French students made extensive use of audiovisual aids for exposition and pattern drill, while the control group followed an oral-aural "dialogue" approach with little or no use of such aids. The results showed the "audio-visual" group to be superior in pronunciation and auditory comprehension, but inferior in reading and writing achievement to the "dialogue" students. Approximately three hundred students in ten classes were involved.[4])

One of the most extensive of the broad-scale comparative research approaches was the project carried out at the University of Colorado during 1960–62 by George A. C. Scherer, a language specialist, and Michael Wertheimer, a psychologist, under the title, "Extended Classroom Experimentation with Varied Sequencing of the Four Skills in German Instruction."[5]) A detailed description of this may be found in the book by the two investigators, *A Psycholinguistic Experiment in Foreign Language Teaching.*[6]) Although the evidence pointed toward the generally superior accomplishment of the "audio-lingual" over the "traditional" group, the authors freely admit that certain variables made firm, clear-cut conclusions impossible-apparently a built-in hazard of research in total methods.

A very large proportion of such research appears to be directed toward comparing the efficacy of instruction with and without mechanical aids (see section 4 below on Electro-Mechanical Devices). In addition, some investigations are

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[3]) Seattle: University of Washington Press, 1965.

An idea of the status of language-teaching research during the interwar period may be gained from Robert Herdon Fife, *A Summary of Reports on the Modern Foreign Languages with an Index to the Reports.* New York: The Macmillan Co., 1931, and Algernon Coleman, *Experiments and Studies in Modern Language Teaching.* Chicago: University of Chicago Press, 1934.

[4]) See John B. Carroll, "Research on Teaching Foreign Languages," Chapter 21 in N. L. Gage (ed.) *Handbook of Research on Teaching.* Chicago: Rand McNally and Co., 1963, 1080; and Howard L. Nostrand *et al.* (eds.), *Research on Language Teaching: An Annotated International Bibliography for 1945–65.* Seattle: University of Washington Press, 1965, 150.

[5]) *Office of Education, Completed research, studies and instructional materials (List No. 4, OE–12016–64),* Washington: GPO, 1964, 20.

[6]) New York: McGraw Hill Book Co., 1964.

concerned with exploring new designs for foreign-language teaching within existing curricular frameworks. As an example of this, one may point to "An Experimental Restructuring of the Undergraduate Foreign Language Curriculum with Supporting Research in Teaching Techniques," conducted with NDEA support at Tulane University by William J. Smither and William S. Woods. Three interim reports have already been written for the Office of Education.[7])

Note should also be taken of the work carried on by the Human Resources Research Office (HUMRRO) of the George Washington University, operating under contract with the Department of the Army. Division No. 7, headed by Dr. A. Hoehn, does research in foreign language and area training. Under research task "Contact" a number of studies have been performed.

Brief, self-instructional courses in Russian and Mandarin Chinese have been designed for military use.[8]) Another research project is aimed at producing a completely self-instructional course of basic Spanish for general use. Other efforts are concerned with student motivation and other variables in foreign-language training.

Turning now to more limited types of experiment, we may cite as an example a study on the order of presentation of writing and meaning in second language learning, performed at the University of California at Berkeley by Jesse O. Sawyer, Susan Ervin and others. Using Japanese as the corpus, the group compared the effect of delaying exposure to written text until speaking habits are strongly established, the effect of written presentation on the early stages of learning and the effect of delaying presentation of meaning. Conclusions were that the order of presentation was less important than the amount of time spent in practice, and that students appeared to make more progress using a phonemic transcription than a purely oral approach.[9])

Illustrative of investigations of pedagogically oriented work on phonology and rich in implications for language pedagogy has been the NDEA-financed project on "The General Phonetic Characteristics of Languages," directed by Pierre Delattre, formerly at the University of Colorado and now at the University

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[7]) *Office of Education, Completed research, List No. 4,* 15.

[8]) Reports describing in detail the design rationale, evaluation data, and samples of programming procedure for these courses have been prepared by Eugene Rocklyn, a psychologist, and Catherine Garvey, a linguist. These may be secured through: Mr. Saul Levisky, Research Information Coordinator, Human Research Office, 300 North Washington St., Alexandria, Virginia 22314. Cf. also the paper of A. I. Fiks in *IRAL* (4.4, 1966), and the paper of E. H. Rocklyn in this issue of *IRAL* (5.1, 1967).

[9]) Jesse Sawyer *et al.,* The utility of translation and written symbols during the first thirty hours of language study, *IRAL,* 1.4 (1963), 157–192. See also Nostrand, *Research,* p. 52; Office of Education, *Completed Research, List No. 4,* p. 22.

of California at Santa Barbara. This project has resulted in a large and growing series of talks and articles.[10])

In the field of language testing, a great impetus has been given to further development by the material support of the National Defense Education Act. Although John B. Carroll and Stanley Sapon had for the most part completed their aptitude test batteries before the NDEA, various researchers have carried out further studies on the variables involved in language ability and performance. For example, Paul Pimsleur, Donald M. Sundland, and Ruth D. McIntyre investigated "Under-Achievement in Foreign Language Learning," results of which have appeared in several articles.[11])

Significant work has been carried on in the preparation of improved instruments for testing proficiency. The *Modern Language Association Achievement Tests,* administered by the Educational Testing Service, Princeton, N. J., cover the four language skills of speaking, understanding reading, and writing, in French, German, Italian, Russian, and Spanish. Of genuine importance in enhancing professionalism in our field has been the preparation of the *MLA Foreign Language Proficiency Tests for Teachers and Advanced Students.* In addition to the four language skills mentioned above, these also measure: knowledge of the target culture, of teaching methodology and of applied linguistics.[12])

The rapid growth of psycholinguistics is bringing real hope for fuller study of aspects of the language learning process that have been relatively neglected until recently. Although the number of scholars devoting themselves to such studies is not yet large, they are already bringing new insight into how persons of varying abilities learn languages, and full knowledge of the variables of both

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[10]) „Teaching the R-consonant by animaied cartoon based on motion-picture X-rays", paper presented at the meeting of the Colorado-Wyoming Chapter, American Association of Teachers of French, Fort Collins, Colo., April 1962.

Testing student's progress in the language laboratory, *International Journal of American Linguistics,* 26 (Oct. 1960, Part II), 77–93.

A comparative study of declarative intonation in American, English, and Spanish, *Hispania,* 45 (May 1962), 333–344.

A series of reports published in *IRAL* during 1963 and 1964 have been assembled in a volume: *Comparing the phonetic features of English, German, Spanish and French,* Heidelberg: Groos Verlag, 1965. Cf. also: A comparison of syllable length conditioning among languages, *IRAL,* 4.3 (1966).

Cf. Nostrand, *Research,* 245–246, *et passim*; Office of Education, *Completed Research, List No. 4,* 62–63.

[11]) For example, P. Pimsleur, L. Mosbery and A. V. Morrison, Student factors in foreign language learning, *Modern Language Journal,* 46 (April 1962), 160–170. P. Pimsleur, Underachievement in foreign language learning, *IRAL,* 2.2 (1964), 71–97. See also: Office of Education, *Completed Research, List No. 4,* 19–20.

[12]) See "MLA foreign language proficiency tests for teachers and advanced students," *PMLA,* 77.4., Part 2 (Sept. 1962). Information on these tests is available from Mrs. Miriam Bryan, Educational Testing Service, Princeton, N. J. 08540.

learning and teaching languages. For particulars of this work one must turn to the compendia of research in progress.[13])

Research is being carried out at the Behavioral Research Center, University of Rochester, by Stanley Sapon and his associates. The Institute for Behavioral Research in Silver Spring, Maryland (2426 Linden Lane) has included foreign language learning research in its activities. One study was undertaken on certain aspects of phonological discrimination training in Vietnamese, and still another on programmed learning of a segment of basic German.[14]) At Georgetown University, Robert Lado has been conducting experiments on memory span and other partials of the language-learning process.[15])

The pedagogic problems of bilinguals have been receiving increased attention. Wallace A. Lambert and his associates at McGill University, Montreal, Canada, have done studies on French-English bilinguals in Canada. Joshua Fishman, Yeshiva University, as a result of his NDEA study, "Non-English Language Resources of American Ethnic Groups," has thrown new light on language maintenance of minority groups and on their learning problems.[16])

Finally, it is to be regretted that monograph-length studies on aspects of the language learning process are still infrequent. An exception is the book by Wilga M. Rivers, *The Psychologist and the Foreign Language Teacher* (University of Chicago Press, 1964), which analyzes audio-lingual procedures in the light of different theories of psychology.

4. Electro-Mechanical Devices and Self-Instructional Aids

It is not surprising that Americans, who by cultural conditioning are so impatient with the hard labor of acquiring lingual skills, should look eagerly to "hardware" to facilitate this demanding process. First hopes were lodged in phonographic discs, then the wire recorder, and when the magnetic tape recorder became commercially available about 1949, expectations soared to new heights. There were even those who predicted that it might eventually displace the teacher. Two decades later, with the number of language laboratories at schools and colleges surpassing 7,000, it has become clear that no such thing is likely to happen, and that no easy miracles should be expected from this quarter.

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[13]) See particularly Theodore W. Walters, S. J., *The Georgetown bibliography of studies contributing to the psycholinguistics of language learning*, Washington, D. C.: Institute of Languages and Linguistics, Georgetown Univ. 1965.

[14]) See M. I. Rocha e Silva and C. B. Ferster, An experiment in teaching a second language, *IRAL*, 4.2 (1966), 85–113.

[15]) For example, see Robert Lado, Memory span as a factor in second language learning, *IRAL*, 3.2 (1965), 123–129.

[16]) For listings of writings based on this study, consult: Office of Education, *Completed research. List No. 4,* 10–11.

Going to opposite extremes, some voices have been raised against the present use of the tape recorder. Among these is Raymond Keating in his pamphlet, *The Effectiveness of the Language Laboratory*, published by the Columbia Teachers College, Institute of Administrative Research, in 1963. As was to be expected, many heated rebuttals followed this work, with its highly unfavorable conclusions about the results achievable in the language laboratory. Let it only be said here that the experiment upon which Keating based his conclusions has been justifiably criticized for serious methodological faults.

Between such polar extremes, however, there is room for a sober, yet positive view. The interest of the profession in probing the potential of the language laboratory is reflected in the large number of experiments involving it during the past decade. This is, of course, quite understandable if we consider that well over thirty million dollars have been expended on this item in the United States.

A large number of the experiments – possibly too high a proportion – have been devoted to comparing results achieved in classes with and without language laboratories. One wonders whether the time has not come for more attention to be paid to the "partials" of the pedagogic processes and to the role that the tape recorder can play in presentation and learning.

At any rate, let us briefly mention some typical investigations which have been carried out in this area. One experiment was designed to test the effects of various kinds of laboratory practice on second-year French students in ten New York City high schools. Half of the students in the two experimental groups had practice sessions in the laboratory daily; the other half once a week. In each of these two sections, fifty percent of the students made use of audio-active equipment exclusively, doing no recording, while the other half worked with recording-playback equipment. The control groups used no electronic equipment at all. It was found that the daily laboratory groups were superior to the no-equipment group in over-all gains. In listening and speaking skills, the daily recording-playback group showed significantly better gains than the daily audio-active one. Moreover, the performance of the group with only one lab practice session a week was no better and sometimes inferior to that of the control group, which had not partiapated in laboratory practice at all.[17])

Joseph C. Hutchinson put his finger on an urgent desideratum: he stated recently that although instructional materials are quite well developed for levels I and II, there is need for considerable experimentation and work on levels III, IV and beyond. Moreover, "... before the nationwide situation can be called anywhere near satisfactory, we will have to expend more time and pioneering effort."

By now, however, much of the hope for "breakthroughs" in language learning have been shifted from the language laboratory to the "teaching

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[17]) Joseph C. Hutchinson, *The language laboratory ... How effective is it?* Office of Education, OE–27021, Washington: GPO, 1964, 13–14.

machine", or more exactly, to programmed teaching. Although educational psychologist Sidney L. Pressey had in the 1920's evolved a fairly advanced prototype for the programmed approach, it is the wide currency given to the learning theory and model of B. F. Skinner, a Harvard psychologist, in the mid and late 1950's that is the source of the present intense professional and public interest.

Considerable efforts are now being expended both in developing programmed courses for language instruction and in experimenting with their application. At Indiana University Albert Valdman and his associates have been developing a beginning college French course which would permit each student to proceed at his own rate. A large number of contact hours is provided for, to facilitate the acquisition of effective audio-lingual skills. "Display sessions" are provided at which students meet with instructors at intervals for further conversational practice. It would appear so far that a large part of the routine aspects of language learning, particularly in the initial stages, can be relegated to the programmed materials and the language laboratory.[18]) (It should be pointed out that most, if not all, of the programmed courses designed to develop oral-aural skills utilize laboratories or tape recorders.

Another experiment, financed in large part by the Office of Education, has been the Audio-Lingual Language Program. This was begun in several languages at the University of Michigan under the direction of F. Rand Morton, and continued by the latter at Lindenwood College, St. Charles, Missouri and at the University of Akron by Theodore Mueller.[19])

At Akron, Theodore Mueller has more recently developed and been using the ALLP French Program (Revised). This consists of student booklets (programmed text) and tapes. The program is divided into four main sections, which are then divided into 'problems' (lessons) and further sub-divided into frames. Part I deals with the discrimination and production of French sounds. Part II teaches a limited vocabulary, sufficient for dealing with the syntactic structures to come in the following part. Part III presents the basic structures needed to speak and understand the informal language; each structure is introduced first in spoken form, and then in writing. It also contains thirty dialogues, intended to expand further the student's vocabulary and to lead him from strictly controlled responses to free expression through models of conversation. In addition, twenty reading passages have been interspersed at various points. Finally, Part IV presents twenty conversations, constituting an extension of the dialogue in Part III. The course requires an estimated 250 hours for

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[18]) See Nostrand, *Research* 157, 328; Office of Education, *Completed research, List No. 3,* 14; Albert Valdman, How do we break the lockstep? *Audiovisual Instruction,* (Nov. 1962), 630–634 and Toward self-instruction in foreign language learning, *IRAL,* 2.1 (Apr. 1964).

[19]) Office of Education, *Completed research, List No. 4,* 25; Nostrand, *Research,* 154–155.

completion, and at Akron has been used with some periodic sessions with instructors.[20])

Although French, Spanish, and German have accounted for most of the experimentation, some work has been done in Russian and other languages. At Indiana University, Irving J. Saltzman, John F. Beebe and Henry Bern carried out a two-phase project. Its first objective was to construct a one-semester self-instruction course in Russian, while the second was to study the influence of different factors on the effectiveness of automated instruction.[21])

Thus far only a very small number of programmed courses have been commercially available which have sufficient material for one or two whole years of basic work for the ordinary high school or college class.

Information on programmed self-instruction in foreign languages is available from the Clearinghouse for Self-Instructional Language Materials of the Center for Applied Linguistics. The Clearinghouse collects and distributes information on available foreign language programs and program use. Literature relating to programs and programming is also collected, and both programs and literature are available for examination at the Clearinghouse office.

Other Clearinghouse activities have included conducting a survey of the use of self-instructional FL programs in American colleges and universities, and collecting information on language programming in other countries.[22])

5. Activity in Some European Lands

Throughout the world there is a spirit of rebellion against traditional grammar-translation techniques and a desire to reform language teaching. Nevertheless, in only a few lands as yet have scientifically controlled pedagogical experiments been conducted.

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[20]) Office of Education, *Completed research, List No. 4,* 21; Theodore Mueller and R. Harris, First year college French through an audio-lingual program, *IRAL*, 4.1 (1966), 19–38. The texts for the Mueller ALLP French Program (Revised) are available from the Univ. of Akron bookstore, while tapes may be secured through arrangement with Dr. Theodore Mueller, Modern Language Dept., Univ. of Akron, Ohio.

[21]) Nostrand, *Research*, 99; see also Irving J. Saltzman, Programmed self-instruction and second language learning, *IRAL*, 1.2 (1963), 104–114.

[22]) Copies of descriptive information sheets are available on request. Information on programmed materials use or projects should be directed to: Janet D. Griffith, Clearing-house for Self-Instructional Language Materials, Center for Applied Linguistics, 1755 Massachusetts Ave., N. W. Washington, D. C., 20036. See also Janet D. Griffith and Catherine J. Garvey, Clearinghouse for self-instructional language materials. A project of the Center for Applied Linguistics (together with a selective bibliography), *Linguistics Reporter* (Newsletter of the Center for Applied Linguistics) Supplement No. 15, June, 1965.

In the Soviet Union, pedagogical studies are carried on under the aegis of the Academy of Pedagogic Sciences, but most of them do not represent the results of controlled experimentation. A great deal of work, however, is being done on programmed learning for Russian as a native language as well as for other subjects and a special section for this purpose has been set up in the Academy of Pedagogic Sciences. Soviet educational literature is also worth watching for information on efforts in the "experimental schools". These represent a growing network of combined elementary-schools, each of which specializes in teaching a single language: English, French, German, Hindi-Urdu, Persian, Arabic or Chinese. Youngsters usually begin learning the second language in the second grade, at the age of eight, and by the seventh grade such school subjects as geography and history are taught in the target language. General satisfaction is being expressed with the progress of this experiment, begun about five years ago. More recently the Soviets have announced still another experimental effort to provide intensive training in world languages to university students majoring in mathematics, physics and other sciences, so that they can teach and do research in the foreign language itself. [23])

In France significant work in methodology has been performed by the Centre de Recherches et d'Etudes pour la Diffusion du Francais of the Ecole Normale Supérieure in Saint Cloud. A team of scholars including Georges Gougenheim, Aurélien Sauvageot, René Michéa and Paul Rivenc have been carrying out extensive studies to determine the frequency of words and grammatical structures in a broad sample of ordinary spoken French. One of the novel aspects of the study was the emphasis on "*disponibilité*", the ready availability of some words for the discussion of a given topic, and on the factors which appear to obstruct recall.

On the basis of the 1,500 most frequent lexical items and several hundred basic grammatical constructions a basic audio-visual course has been elaborated, titled *Voix et Images de France*. In each unit, sound and film are coordinated to arrive at a "transposed reality" in which the target-language utterances are intended to form an integral part of the situation. Presentation of the filmed dialogue with sound is followed by manipulation of the basic vocabulary and grammar pattern through drills. Finally, "spontaneous conversation" on the topic of the unit is practiced with the class. More advanced texts are in various stages of preparation, not only in French, but also in German, Spanish, and Russian.[24]) In the United States the St. Cloud approach is represented by the Center for Curriculum Development in Audio-Visual Teaching, 525 Locust Street, Philadelphia.

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[23]) See Jacob Ornstein, Foreign Language Teaching, in T. Sebeok *et al*, eds., *Current trends in linguistics*, Vol. I, (Soviet and East European Linguistics), The Hague: Mouton, 1963, 143–191.

[24]) Consult also, Denis Girard, New trends in language teaching in France, *NAFSA Studies and Papers, English Language Series*. No. 9, 1963.

In Germany a group of scholars have attracted worldwide attention through their work on "inhaltsbezogene Grammatik", or "meaning-oriented grammar". These include Professors Leo Weisgerber at the University of Bonn, Hennig Brinckmann of Heidelberg University and Hans Glinz of the Technische Hochschule of Aachen. Taking Saussurian linguistics as their point of departure, these scholars choose to approach structure through meaning. In their pedagogic application, they insist that the student gain insight into the target language and master it "internally rather than externally", by developing an intuitive grasp of its semantic system. The new Duden German grammar embodies many of the ideas of these theoreticians, as does the text *Deutsche Sprachlehre für Ausländer* (Part I, New Edition, Munich, 1962), written by Heinz Griesbach and Dora Schulz, and intended for second-language learning.

We feel strongly that more cross-fertization ought to occur between American and foreign researchers in methodology. Certainly we Americans might benefit from examining foreign research more carefully, particularly in the lexical and semantic aspects of language teaching, which have received more attention in Western Europe than in the United states. Incidentally, a fine example of intercontinental cooperation has been the NDEA- financed project on Spoken German, conducted by J. Alan Pfeffer of the University of Pittsburgh. In cooperation with colleagues in the respective lands, 400 twelve-minute taped interviews comprising some 600,000 words were secured in West Germany, Austria, and Switzerland from a cross-section of German speakers. A basic list of 1,269 high-frequency lexical items were compiled in this way, [25]) and a series of eleven books is planned on the vocabulary, semantics and grammatical structures of Spoken German.

6. *Some Desiderata in Pedagogic Research*

It would, of course, be difficult to draw up a list of priorities for research in language-teaching methodology which would be approved by a majority of colleagues. We can therefore do no more and no less than to express our personal views on what appear to them to be the most urgent desiderata in the field. A sampling or poll of opinion on the subject among persons closest to the research sector would be desirable but beyond our present scope. The thoughts of a few such individuals will, nevertheless, be adduced.

John B. Carroll, in his article "Research on Teaching Foreign Language", concludes that educational research has contributed relatively little aside from some insights into aptitude and achievement testing and the psychology of bilingualism. Psychologists, he feels, have frequently failed to produce useful results because their experimental settings have been too remote from actual classroom situations,

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[25]) J. Alan Pfeffer, *Grundstufe: Basic (Spoken) German, Word List,* Englewood Cliffs, N.J.: Prentice Hall, 1964. See also Office of Education, *Completed research, List No. 4,* 26, and *New York Times Sunday Education Page,* Dec. 29, 1963.

whereas studies undertaken by foreign-language teachers have seldom shown adequate research methodology. He calls for experimentation that is both efficient and effective, of a sort that could contribute significantly to educational policy regarding foreign-language teaching.

> "Information is desired on which to base decisions concerning who should be taught foreign languages, at which ages instruction should be started and how long it should be continued, what languages should be taught, what skills should be emphasized, and what kind of outlays of staff, space and equipment are required to support the resulting instrumental program."[26])

Alfred S. Hayes, in a public lecture at the International Conference on Modern Foreign Language Teaching held in Berlin, 1964, singled out four critical problem areas: (1) Better understanding of the process of listening, and investigation of means to intensify aural practice; (2) Further development of the potential of programmed instruction and application of its insights in both the classroom situation and textbook preparation; (3) Greater exploration of the vast possibilities offered by electro-mechanical resources now available to serve the whole field of education; (4) Investigation of ways to harness findings in related disciplines to language teaching tasks.[27])

As for us, we feel that it is futile to toss all research onto one amorphous pile where little or nothing can be retrieved for continuing investigation or application. Substantial breakthroughs are possible only through imaginative experimentation employing a larger variety of techniques and equipment than has been the case thus far. This would involve shifting much of the present research emphasis from "total methods" to specific problems in pronunciation, grammar, and vocabulary acquisition in the four skills of listening, speaking, reading, and writing. Here are some proposed targets of investigation, meant to be suggestive rather than exhaustive:

(1) A comparison of reinforcement theory and techniques as generally used in programmed learning with more complex, deductively structured presentation and with association techniques.

(2) A study of the appropriate amounts and order of exposure to the four activities of language: listening, speaking, reading and writing.

(3) A comparison of various schedules of transition from a single stimulus, set and context to a variety of stimuli, sets and contexts.

(4) Exploration of the ways of extending immediate memory into long-term memory, and study of the maximum amounts of learning material that can be presented effectively.

(5) Research on specific ways to present or reinforce linguistic responses, for example,

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[26]) Carroll, *Research,* 52.

[27]) The paper, in expanded form, was published in *Modern Language Journal, 49.5* (May, 1965), 281–93.

a) To test experimentally whether translation exercises are as effective as substitution drills for establishing new linguistic habits.
b) To determine whether memorization of dialogues is more effective when their meaning and recall are stimulated through the native language or through a variety of other means.

(6) Research on specific problems of memory span, mimicry, reaction time, optimal periods of passive and active practice in the laboratory, and other "partials" of the learning process.

(7) Collection of data on the ontogenetic development of language-learning ability in such areas as mimicry, grammatical influence, analogic extension of a new pattern and sheer memory for learning basic sentences.

(8) Exploration of the actual vocabulary size of students at various levels of proficiency and of native speakers of comparable education and circumstances.

(9) More research studies on the measurement, effect, and basis of motivation.

(10) Investigations in depth of specific problem areas in developing linguistically-oriented learning materials for the reading and writing skills (especially for specialized courses such as scientific and politico-economic reading).

(11) Exploration of specific techniques for the most effective use of such media as television, rather than over-all comparative study of the efficacy of these electronic devices as such.

(12) Research on the effectiveness of various types of visual aids for specific elements of learning, with a view to preparing such aids for teaching both the usual and the neglected languages.

(13) Investigation of needs in the area of lexicography in order to stimulate the production of improved glossaries and dictionaries (bilingual and monolingual) for student use.

Research efforts of this type would require the collaboration of linguistics, psychologists, and educational specialists, as well as laboratory and student assistants. The most up-to-date equipment available ought to be harnessed to research efforts, including the overhead projector, individual videotape playback, various types of teaching machines, tachistoscopes, reading pacers, memory drums, synchronized tape recorders, slide projectors, and the electronic ear.

Special attention ought to paid to the potential for language-teaching research of increasingly available electronic computer facilities, which make possible the systematization, storage and retrieval of a vast amount of information concerning a given language or a single aspect of it. Scholars or teams of scholars can now examine a corpus with an synoptic view of its partials that was hitherto impossible. There is growing interest in this subject in our profession, and apparently some beginnings have been made in this type of research.[28])

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[28]) An example is Office of Education Project OE5–10–115, begun by Joseph Van Campen, Dept. of Slavic Languages, Harvard University, August 1964. Its title and aim: "An investigation of the use of digital computers in the creation

There is an urgent need for improved ways of systematizing the findings of both past and present research on language-teaching methodology, incorporating data from contributory disciplines. Such an inventory would provide a safeguard against costly duplication, and would give a clearer insight into the areas of our field most urgently in need of attention. Fortunately, electronic resources are now revolutionizing information retrieval processes, and will, it is hoped, be increasingly applied to language needs.

Finally, one of the most important items on the agenda of language teaching is the preparation of more researchers able to utilize the findings of linguistics, psychology and other contributory sciences for controlled experimentation directly relating to classroom practice.

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of programmed language instruction with particular reference to standard Ukrainian and American English."